REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Service, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.

PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE (DD-MM-YYYY) 21-01-2001	2. REPORT DATE Final	3. DATES COVERED (From - To) 10/1/1998-4/30/2001

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
A Dietary Strategy to Maximize Bone Mass in United States Naval Academy Midshipmen	5b. GRANT NUMBER N00014-99-1-0159
	5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)	5d. PROJECT NUMBER
David Armstrong, PhD	5e. TASK NUMBER
	5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)	8. PERFORMING ORGANIZATION REPORT NUMBER
The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.	

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
Office of Naval Research BAllston Centre Tower One 800 NOrth Quincy Street Arlington, VA 22217-5661	ONR
	11. SPONSORING/MONITORING AGENCY REPORT NUMBER

12. DISTRIBUTION AVAILABILITY STATEMENT

Approved for Public Release; distribution is Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

Starting with 262 subjects, 49 remained active with the study and had DEXA Data obtained. The report contains the repeated measures ANCOVA of the DEXA BMD and TBMC. There are no significant differences between treatment groups for any outcome variable.

20010627 061

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE	UU	27	David Armstrong
					19b. TELEPONE NUMBER (Include area code) 301-295-5184

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI-Std Z39-18

A Dietary Strategy to Maximize Bone Mass in United States Naval Academy Midshipmen.
Mona Calvo, PhD, Principal Investigator.

Report of DEXA findings by David W. Armstrong, III, PhD, Co-PI.

As of February 1, 2001, 62 of 262 subjects reportedly remained active in the study.

As of March 9, 2001 DEXA data was obtained from 49 of 62 remaining subjects.

2 Subjects sent notice that they were withdrawing from the study due to non-compliance.

11 failed to schedule an appointment despite repeated attempts to contact them.

We presume that these 11 subjects have withdrawn from the study.

Subject Height and Weight:

Height(cm)	2000	2001
Female(N=14)	166.3	166.4 ns
Male (N=35)	178.2	178.5 ns

Weight(kg)		
Female	65.2	66.4 ns
Male	76.2	78.4 p<.001

Self-report compliance by these 49 subjects:

1. Food Bar(1 bar per day) was < 75%
2. Pills (8 per day) <50%.

The following pages contain the repeated measures ANCOVA of the DEXA BMD and TBMC for 49 subjects measured in early 2000 and early 2001. The co-variate used to adjust the means is change in body weight from the scan date in 2000 to the scan date in 2001.

LSMEANS tables and plots by SEX below:
1. Distribution of treatment groups by sex.
2. Age distribution by sex and treatment group.
3. Trochanter – Bone Mineral Density (BMD)
3. Femoral neck – BMD and % Change in BMD
4. Tibia – BMD and % Change in BMD
5. Total Body Bone Mineral Content (TBMC) and % Change in TBMC
6. L3 Lumbar spine - BMD

<u>**There are NO significant differences between treatment groups for any outcome variable.**</u>

Distribution of 49 remaining subjects within treatment groups by sex.

Mosaic Plot
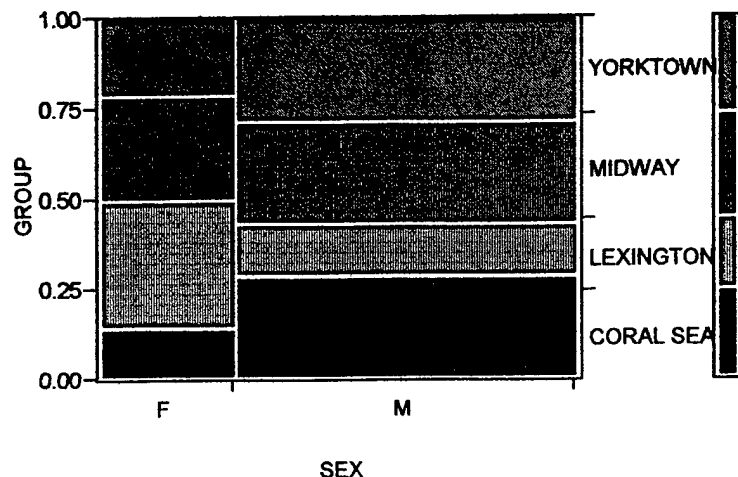
Contingency Table

SEX By GROUP

Count Total % Col % Row %	CORAL SEA Bar = GRS PIII= EOW	LEXINGTON	MIDWAY	YORKTOWN	
F	2 4.08 16.67 14.29	5 10.20 50.00 35.71	4 8.16 28.57 28.57	3 6.12 23.08 21.43	14 28.57
M	10 20.41 83.33 28.57	5 10.20 50.00 14.29	10 20.41 71.43 28.57	10 20.41 76.92 28.57	35 71.43
	12 24.49	10 20.41	14 28.57	13 26.53	49

Tests

Source	DF	-LogLike	RSquare (U)
Model	3	1.578575	0.0234
Error	43	65.984744	
C. Total	46	67.563320	
N	49		

Test	ChiSquare	Prob>ChiSq
Likelihood Ratio	3.157	0.3680
Pearson	3.276	0.3510

Warning: 20% of cells have expected count less than 5, ChiSquare suspect

Age of subjects at first DEXA scan in 2000

Response AGE-00
Whole Model

Summary of Fit

RSquare	0.182064
RSquare Adj	0.042416
Root Mean Square Error	1.332715
Mean of Response	19.98278
Observations (or Sum Wgts)	49

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	7	16.209251	2.31561	1.3037
Error	41	72.821261	1.77613	Prob > F
C. Total	48	89.030512		0.2730

Effect Tests

Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
GROUP	3	3	2.9044459	0.5451	0.6542
SEX	1	1	3.2055850	1.8048	0.1865
SEX*GROUP	3	3	1.5609382	0.2929	0.8302

GROUP

Least Squares Means Table

Level	Least Sq Mean	Std Error	Mean
CORAL SEA	20.004384	0.51615816	20.4667
LEXINGTON	19.487397	0.42144137	19.4874
MIDWAY	20.104452	0.39422231	20.2851
YORKTOWN	19.544977	0.43865009	19.5916

SEX

Least Squares Means Table

Level	Least Sq Mean	Std Error	Mean
F	19.310959	0.94237156	19.3380
M	20.697808	0.42144137	20.2407

SEX*GROUP

Least Squares Means Table

Level	Least Sq Mean	Std Error
F,CORAL SEA	19.310959	0.94237156
F,LEXINGTON	19.000548	0.59600811
F,MIDWAY	19.682877	0.66635732
F,YORKTOWN	19.458447	0.76944316
M,CORAL SEA	20.697808	0.42144137
M,LEXINGTON	19.974247	0.59600811
M,MIDWAY	20.526027	0.42144137
M,YORKTOWN	19.631507	0.42144137

Age distributions by Group and Sex

**CORAL SEA, F
Distributions
AGE-00**
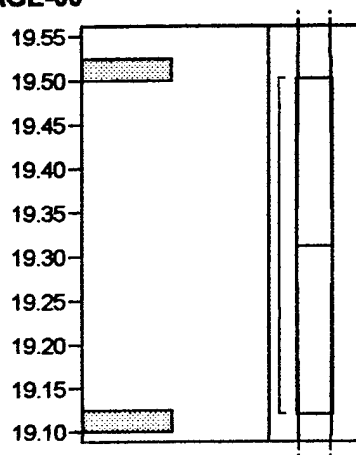
Moments

Mean	19.31096
Std Dev	0.26928
Std Err Mean	0.19041
upper 95% Mean	21.73032
lower 95% Mean	16.89160
N	2.00000

**CORAL SEA, M
Distributions
AGE-00**
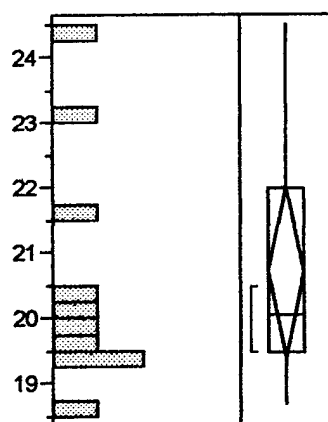
Moments

Mean	20.69781
Std Dev	1.82715
Std Err Mean	0.57780
upper 95% Mean	22.00489
lower 95% Mean	19.39073
N	10.00000

LEXINGTON, F
Distributions
AGE-00
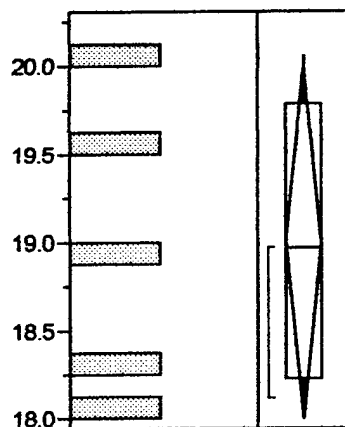
Moments

Mean	19.00055
Std Dev	0.80442
Std Err Mean	0.35975
upper 95% Mean	19.99936
lower 95% Mean	18.00174
N	5.00000

LEXINGTON, M
Distributions
AGE-00
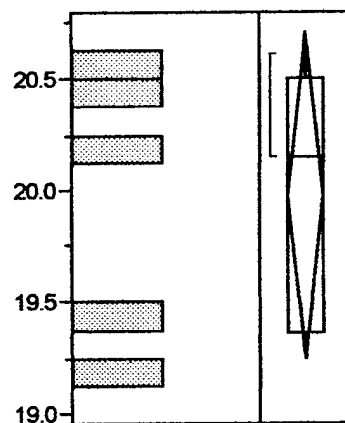
Moments

Mean	19.97425
Std Dev	0.58839
Std Err Mean	0.26314
upper 95% Mean	20.70482
lower 95% Mean	19.24367
N	5.00000

MIDWAY, F
Distributions
AGE-00
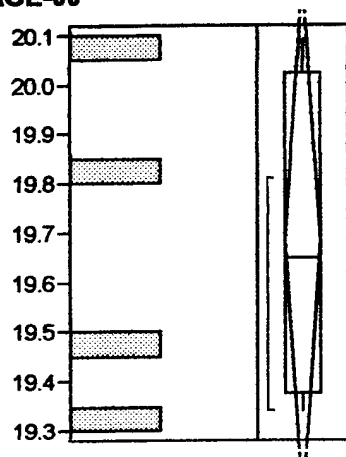
Moments

Mean	19.68288
Std Dev	0.33607
Std Err Mean	0.16804
upper 95% Mean	20.21765
lower 95% Mean	19.14810
N	4.00000

MIDWAY, M
Distributions
AGE-00
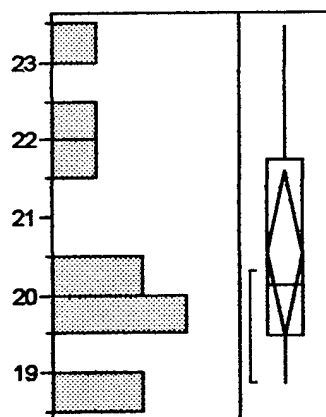
Moments

Mean	20.52603
Std Dev	1.47756
Std Err Mean	0.46725
upper 95% Mean	21.58302
lower 95% Mean	19.46903
N	10.00000

YORKTOWN, F
Distributions
AGE-00
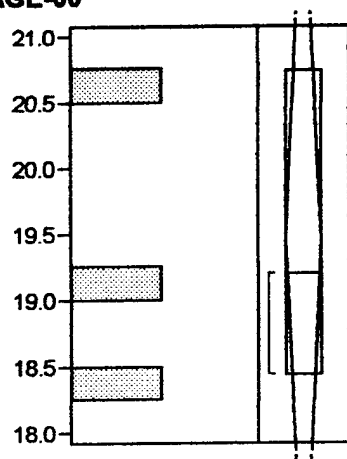
Moments

Mean	19.45845
Std Dev	1.17002
Std Err Mean	0.67551
upper 95% Mean	22.36497
lower 95% Mean	16.55193
N	3.00000

YORKTOWN, M
Distributions
AGE-00
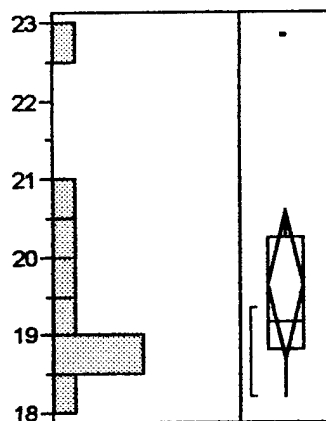
Moments

Mean	19.63151
Std Dev	1.33349
Std Err Mean	0.42169
upper 95% Mean	20.58543
lower 95% Mean	18.67758
N	10.00000

Trochanter

Female

Manova Fit

Least Squares Means
Overall Means

Responses
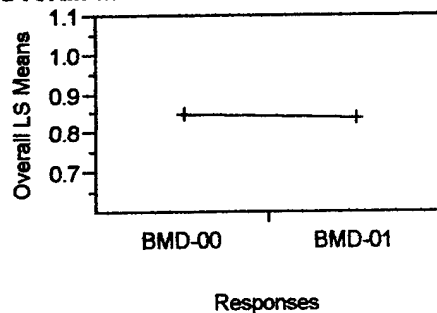
	Overall MeansBMD-00	BMD-01
	0.85065113	0.84227926

GROUP

Responses
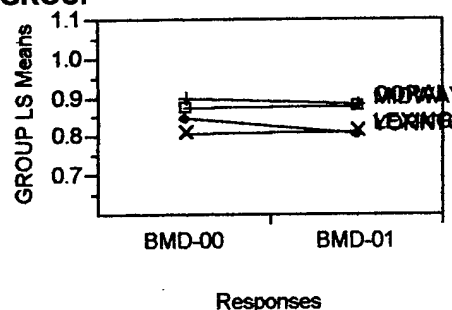
GROUP	BMD-00	BMD-01
CORAL SEA	0.90228625	0.88724773
LEXINGTON	0.81147202	0.81297529
MIDWAY	0.87481816	0.8814852
YORKTOWN	0.84930354	0.80886563

Within Subjects

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	1.4287775	3.2147	4	9	0.0673
Univar unadj Epsilon=	1	3.2147	4	9	0.0673
Univar G-G Epsilon=	1	3.2147	4	9	0.0673
Univar H-F Epsilon=	1	3.2147	4	9	0.0673

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.159918	1.4393	1	9	0.2609
Univar unadj Epsilon=	1	1.4393	1	9	0.2609
Univar G-G Epsilon=	1	1.4393	1	9	0.2609
Univar H-F Epsilon=	1	1.4393	1	9	0.2609

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	1.342198	4.0266	3	9	0.0453
Univar unadj Epsilon=	1	4.0266	3	9	0.0453
Univar G-G Epsilon=	1	4.0266	3	9	0.0453
Univar H-F Epsilon=	1	4.0266	3	9	0.0453

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.038073	0.3427	1	9	0.5727

Test	Value	Exact F	NumDF	DenDF	Prob>F
Univar unadj Epsilon=	1	0.3427	1	9	0.5727
Univar G-G Epsilon=	1	0.3427	1	9	0.5727
Univar H-F Epsilon=	1	0.3427	1	9	0.5727

Trochanter

Male
Manova Fit

Least Squares Means
Overall Means

Responses
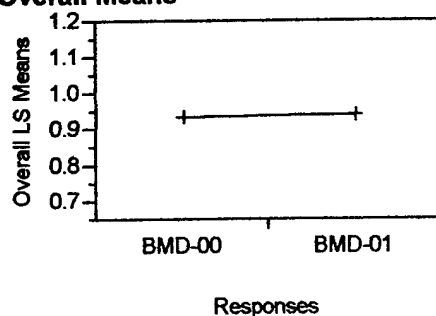
	Overall MeansBMD-00	BMD-01
	0.93347936	0.94154055

GROUP

Responses
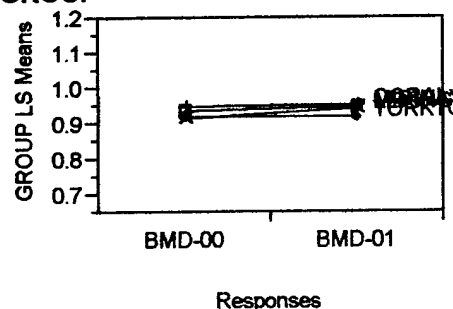
GROUP	BMD-00	BMD-01
CORAL SEA	0.94995513	0.95382556
LEXINGTON	0.91613262	0.94232311
MIDWAY	0.93728674	0.94847277
YORKTOWN	0.92186959	0.92193205

Within Subjects

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.1537795	1.1533	4	30	0.3509
Univar unadj Epsilon=	1	1.1533	4	30	0.3509
Univar G-G Epsilon=	1	1.1533	4	30	0.3509
Univar H-F Epsilon=	1	1.1533	4	30	0.3509

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0013149	0.0394	1	30	0.8439
Univar unadj Epsilon=	1	0.0394	1	30	0.8439
Univar G-G Epsilon=	1	0.0394	1	30	0.8439
Univar H-F Epsilon=	1	0.0394	1	30	0.8439

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0793262	0.7933	3	30	0.5073
Univar unadj Epsilon=	1	0.7933	3	30	0.5073
Univar G-G Epsilon=	1	0.7933	3	30	0.5073
Univar H-F Epsilon=	1	0.7933	3	30	0.5073

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0764654	2.2940	1	30	0.1403
Univar unadj Epsilon=	1	2.2940	1	30	0.1403
Univar G-G Epsilon=	1	2.2940	1	30	0.1403

Test	Value	Exact F	NumDF	DenDF	Prob>F
Univar H-F Epsilon=	1	2.2940	1	30	0.1403

Femoral Neck

Female

Manova Fit

Least Squares Means
Overall Means

Responses
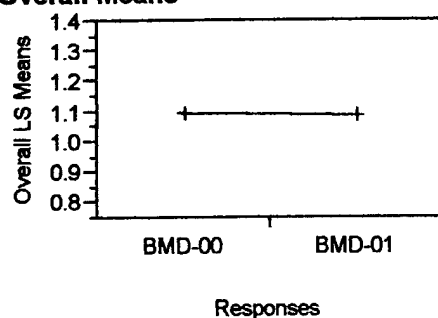
	Overall MeansBMD-00	BMD-01
	1.09285424	1.08602925

GROUP

Responses
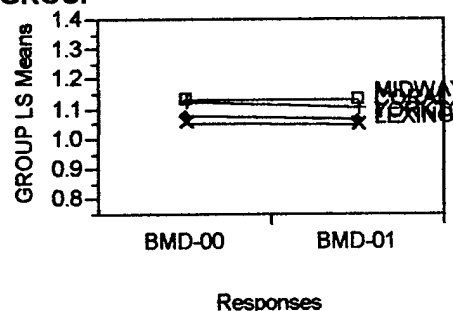
GROUP	BMD-00	BMD-01
CORAL SEA	1.12723519	1.1078849
LEXINGTON	1.05395325	1.0466483
MIDWAY	1.13122761	1.13645802
YORKTOWN	1.0836041	1.06985535

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0674735	0.1518	4	9	0.9574
Univar unadj Epsilon=	1	0.1518	4	9	0.9574
Univar G-G Epsilon=	1	0.1518	4	9	0.9574
Univar H-F Epsilon=	1	0.1518	4	9	0.9574

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0231938	0.2087	1	9	0.6586
Univar unadj Epsilon=	1	0.2087	1	9	0.6586
Univar G-G Epsilon=	1	0.2087	1	9	0.6586
Univar H-F Epsilon=	1	0.2087	1	9	0.6586

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0412966	0.1239	3	9	0.9436
Univar unadj Epsilon=	1	0.1239	3	9	0.9436
Univar G-G Epsilon=	1	0.1239	3	9	0.9436
Univar H-F Epsilon=	1	0.1239	3	9	0.9436

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0139323	0.1254	1	9	0.7314
Univar unadj Epsilon=	1	0.1254	1	9	0.7314
Univar G-G Epsilon=	1	0.1254	1	9	0.7314
Univar H-F Epsilon=	1	0.1254	1	9	0.7314

Test	Value	Exact F	NumDF	DenDF	Prob>F

Female
Percent change in BMD of the Femoral Neck

Whole Model

Summary of Fit

RSquare	0.048905
RSquare Adj	-0.3738
Root Mean Square Error	4.772594
Mean of Response	-0.59657
Observations (or Sum Wgts)	14

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	4	10.54091	2.6352	0.1157
Error	9	204.99886	22.7777	Prob > F
C. Total	13	215.53977		0.9736

Effect Tests

Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
GROUP	3	3	7.1336796	0.1044	0.9554
WT CHG %	1	1	1.4279534	0.0627	0.8079

Least Squares Means Table

Level	Least Sq Mean	Std Error	Mean
CORAL SEA	-1.6683217	3.4025756	-1.55956
LEXINGTON	-0.7588335	2.3268968	-0.99088
MIDWAY	0.4539381	2.4991204	0.63983
YORKTOWN	-1.0123091	2.7681855	-0.94592

Femoral Neck

Male

Least Squares Means
Overall Means

Responses
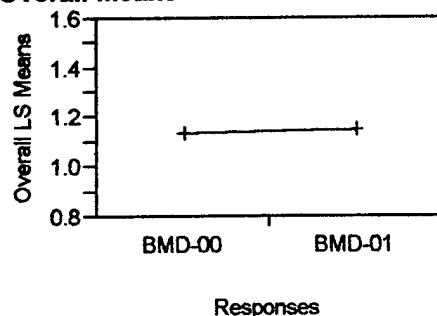
	Overall MeansBMD-00	BMD-01
	1.13353415	1.15548176

GROUP

Responses
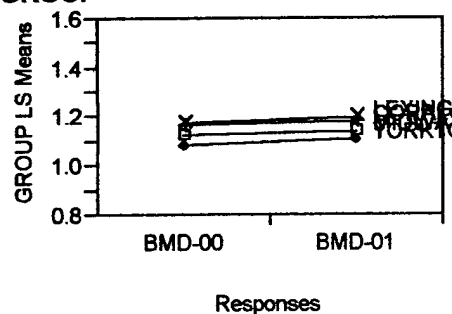
GROUP	BMD-00	BMD-01
CORAL SEA	1.16799925	1.187175
LEXINGTON	1.17230524	1.20363954
MIDWAY	1.12664166	1.14360815
YORKTOWN	1.086576	1.11158324

Within Subjects

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.3173568	2.3802	4	30	0.0739
Univar unadj Epsilon=	1	2.3802	4	30	0.0739
Univar G-G Epsilon=	1	2.3802	4	30	0.0739
Univar H-F Epsilon=	1	2.3802	4	30	0.0739

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0038165	0.1145	1	30	0.7374
Univar unadj Epsilon=	1	0.1145	1	30	0.7374
Univar G-G Epsilon=	1	0.1145	1	30	0.7374
Univar H-F Epsilon=	1	0.1145	1	30	0.7374

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0166698	0.1667	3	30	0.9180
Univar unadj Epsilon=	1	0.1667	3	30	0.9180
Univar G-G Epsilon=	1	0.1667	3	30	0.9180
Univar H-F Epsilon=	1	0.1667	3	30	0.9180

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.2597725	7.7932	1	30	0.0090
Univar unadj Epsilon=	1	7.7932	1	30	0.0090
Univar G-G Epsilon=	1	7.7932	1	30	0.0090
Univar H-F Epsilon=	1	7.7932	1	30	0.0090

Male

Percent change in BMD of the Femoral Neck
Whole Model

Summary of Fit
RSquare	0.208312
RSquare Adj	0.102754
Root Mean Square Error	3.399361
Mean of Response	1.867626
Observations (or Sum Wgts)	35

Analysis of Variance
Source	DF	Sum of Squares	Mean Square	F Ratio
Model	4	91.21704	22.8043	1.9734
Error	30	346.66962	11.5557	Prob > F
C. Total	34	437.88666		0.1241

Effect Tests
Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
GROUP	3	3	6.366620	0.1837	0.9067
WT CHG %	1	1	70.468552	6.0982	0.0194

Least Squares Means Table
Level	Least Sq Mean	Std Error	Mean
CORAL SEA	1.7607061	1.0793461	2.00042
LEXINGTON	2.5638141	1.5225621	2.77138
MIDWAY	1.3102615	1.1016081	0.71567
YORKTOWN	2.1838176	1.0797709	2.43492

Tibia

Female

Manova Fit

Least Squares Means
Overall Means

Responses
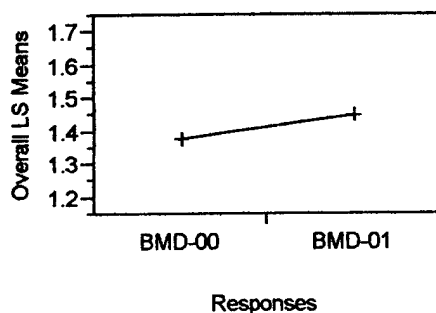
	Overall MeansBMD-00	BMD-01
	1.37532239	1.44943919

GROUP

Responses
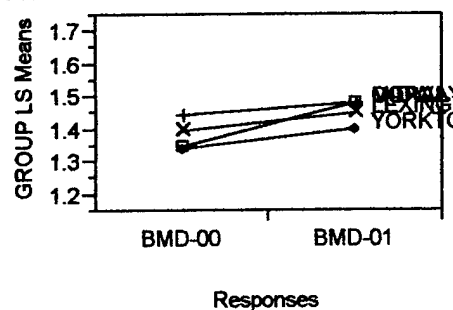
GROUP	BMD-00	BMD-01
CORAL SEA	1.44537462	1.48291194
LEXINGTON	1.3968017	1.45036835
MIDWAY	1.3454517	1.47970064
YORKTOWN	1.34331782	1.40127991

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.5009996	1.2525	4	10	0.3503
Univar unadj Epsilon=	1	1.2525	4	10	0.3503
Univar G-G Epsilon=	1	1.2525	4	10	0.3503
Univar H-F Epsilon=	1	1.2525	4	10	0.3503

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0480703	0.4807	1	10	0.5039
Univar unadj Epsilon=	1	0.4807	1	10	0.5039
Univar G-G Epsilon=	1	0.4807	1	10	0.5039
Univar H-F Epsilon=	1	0.4807	1	10	0.5039

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.4711343	1.5704	3	10	0.2572
Univar unadj Epsilon=	1	1.5704	3	10	0.2572
Univar G-G Epsilon=	1	1.5704	3	10	0.2572
Univar H-F Epsilon=	1	1.5704	3	10	0.2572

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0954706	0.9547	1	10	0.3516
Univar unadj Epsilon=	1	0.9547	1	10	0.3516
Univar G-G Epsilon=	1	0.9547	1	10	0.3516
Univar H-F Epsilon=	1	0.9547	1	10	0.3516

Tibia

Female

Percent Change in Tibia BMD

Whole Model

Summary of Fit

RSquare	0.338404
RSquare Adj	0.044362
Root Mean Square Error	4.823266
Mean of Response	5.611045
Observations (or Sum Wgts)	14

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	4	107.09467	26.7737	1.1509
Error	9	209.37509	23.2639	Prob > F
C. Total	13	316.46976		0.3931

Effect Tests

Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
GROUP	3	3	102.76803	1.4725	0.2864
WT CHG %	1	1	21.62070	0.9294	0.3602

Least Squares Means Table

Level	Least Sq Mean	Std Error	Mean
CORAL SEA	2.729213	3.4387022	2.30600
LEXINGTON	3.888794	2.3516025	4.79173
MIDWAY	10.032534	2.5256546	9.30921
YORKTOWN	4.507366	2.7975764	4.24905

Tibia
M
Manova Fit

Least Squares Means
Overall Means
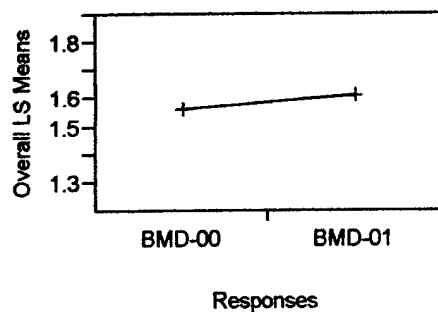
	Overall MeansBMD-00	BMD-01
	1.56615657	1.61435901

GROUP
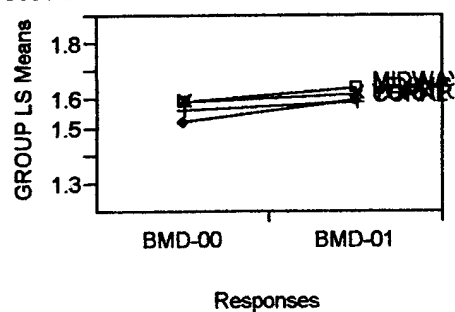
GROUP	BMD-00	BMD-01
CORAL SEA	1.56730085	1.59342786
LEXINGTON	1.59310069	1.62097329
MIDWAY	1.59248084	1.64514921
YORKTOWN	1.52521597	1.60119283

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.1739256	1.3044	4	30	0.2908
Univar unadj Epsilon=	1	1.3044	4	30	0.2908
Univar G-G Epsilon=	1	1.3044	4	30	0.2908
Univar H-F Epsilon=	1	1.3044	4	30	0.2908

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0566132	1.6984	1	30	0.2024
Univar unadj Epsilon=	1	1.6984	1	30	0.2024
Univar G-G Epsilon=	1	1.6984	1	30	0.2024
Univar H-F Epsilon=	1	1.6984	1	30	0.2024

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.1737782	1.7378	3	30	0.1804
Univar unadj Epsilon=	1	1.7378	3	30	0.1804
Univar G-G Epsilon=	1	1.7378	3	30	0.1804
Univar H-F Epsilon=	1	1.7378	3	30	0.1804

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0016655	0.0500	1	30	0.8246
Univar unadj Epsilon=	1	0.0500	1	30	0.8246
Univar G-G Epsilon=	1	0.0500	1	30	0.8246
Univar H-F Epsilon=	1	0.0500	1	30	0.8246

Male

Percent Change in Tibia BMD

Whole Model
Summary of Fit
RSquare	0.153908
RSquare Adj	0.041096
Root Mean Square Error	3.442921
Mean of Response	3.10332
Observations (or Sum Wgts)	35

Analysis of Variance
Source	DF	Sum of Squares	Mean Square	F Ratio
Model	4	64.68741	16.1719	1.3643
Error	30	355.61118	11.8537	Prob > F
C. Total	34	420.29859		0.2697

Effect Tests
Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
GROUP	3	3	64.023623	1.8004	0.1684
WT CHG %	1	1	1.104569	0.0932	0.7623

Least Squares Means Table
Level	Least Sq Mean	Std Error	Mean
CORAL SEA	1.6458251	1.0931771	1.67584
LEXINGTON	1.7438904	1.5420726	1.76988
MIDWAY	3.4378793	1.1157244	3.36344
YORKTOWN	4.9059699	1.0936073	4.93741

Total Body BMC

Female

Manova Fit
Least Squares Means
Overall Means

Responses
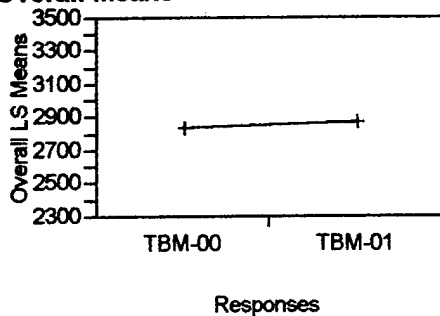
Overall Means	TBM-00	TBM-01
	2843.15714	2873.60443

GROUP

Responses
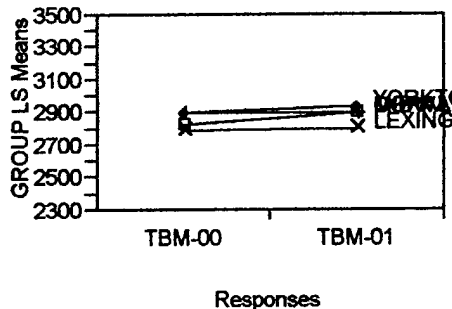
GROUP	TBM-00	TBM-01
CORAL SEA	2898.05656	2897.30121
LEXINGTON	2796.81026	2806.38707
MIDWAY	2827.23682	2901.35433
YORKTOWN	2905.02943	2932.83564

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.3158319	0.7106	4	9	0.6049
Univar unadj Epsilon=	1	0.7106	4	9	0.6049
Univar G-G Epsilon=	1	0.7106	4	9	0.6049
Univar H-F Epsilon=	1	0.7106	4	9	0.6049

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0002204	0.0020	1	9	0.9654
Univar unadj Epsilon=	1	0.0020	1	9	0.9654
Univar G-G Epsilon=	1	0.0020	1	9	0.9654
Univar H-F Epsilon=	1	0.0020	1	9	0.9654

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.2976673	0.8930	3	9	0.4813
Univar unadj Epsilon=	1	0.8930	3	9	0.4813
Univar G-G Epsilon=	1	0.8930	3	9	0.4813
Univar H-F Epsilon=	1	0.8930	3	9	0.4813

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0025566	0.0230	1	9	0.8828
Univar unadj Epsilon=	1	0.0230	1	9	0.8828
Univar G-G Epsilon=	1	0.0230	1	9	0.8828
Univar H-F Epsilon=	1	0.0230	1	9	0.8828

Female

Percent change in TBMC

Summary of Fit
RSquare	0.19076
RSquare Adj	-0.1689
Root Mean Square Error	2.434555
Mean of Response	1.087033
Observations (or Sum Wgts)	14

Analysis of Variance
Source	DF	Sum of Squares	Mean Square	F Ratio
Model	4	12.574534	3.14363	0.5304
Error	9	53.343505	5.92706	Prob > F
C. Total	13	65.918039		0.7170

Effect Tests
Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
GROUP	3	3	11.781917	0.6626	0.5956
WT CHG %	1	1	0.046009	0.0078	0.9317

Least Squares Means Table
Level	Least Sq Mean	Std Error	Mean
CORAL SEA	-0.0790209	1.7356927	-0.09854
LEXINGTON	0.4390763	1.1869767	0.48073
MIDWAY	2.5226421	1.2748299	2.48928
YORKTOWN	1.0301862	1.4120830	1.01827

Male

TBMC

Manova Fit

Least Squares Means
Overall Means

Responses
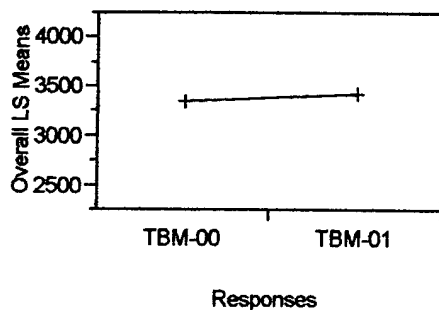
Overall Means	TBM-00	TBM-01
	3348.30238	3422.19326

GROUP

Responses
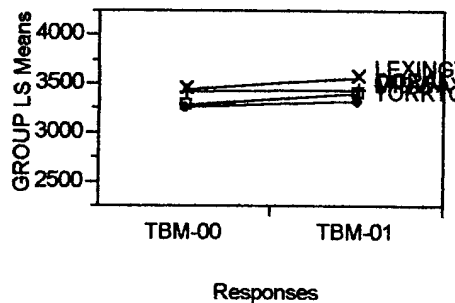
GROUP	TBM-00	TBM-01
CORAL SEA	3436.64903	3443.79681
LEXINGTON	3455.4947	3577.30641
MIDWAY	3295.67538	3414.10839
YORKTOWN	3267.82125	3333.27837

Within Subjects

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.1313608	0.9524	4	29	0.4482
Univar unadj Epsilon=	1	0.9524	4	29	0.4482
Univar G-G Epsilon=	1	0.9524	4	29	0.4482
Univar H-F Epsilon=	1	0.9524	4	29	0.4482

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0014105	0.0409	1	29	0.8411
Univar unadj Epsilon=	1	0.0409	1	29	0.8411
Univar G-G Epsilon=	1	0.0409	1	29	0.8411
Univar H-F Epsilon=	1	0.0409	1	29	0.8411

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.1101987	1.0653	3	29	0.3790
Univar unadj Epsilon=	1	1.0653	3	29	0.3790
Univar G-G Epsilon=	1	1.0653	3	29	0.3790
Univar H-F Epsilon=	1	1.0653	3	29	0.3790

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0351005	1.0179	1	29	0.3214
Univar unadj Epsilon=	1	1.0179	1	29	0.3214

Test	Value	Exact F	NumDF	DenDF	Prob>F
Univar G-G Epsilon=	1	1.0179	1	29	0.3214
Univar H-F Epsilon=	1	1.0179	1	29	0.3214

MALE

Percent change in TBMC

Whole Model

Summary of Fit

RSquare	0.099113
RSquare Adj	-0.02515
Root Mean Square Error	4.571136
Mean of Response	2.352236
Observations (or Sum Wgts)	34

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	4	66.66651	16.6666	0.7976
Error	29	605.96328	20.8953	Prob > F
C. Total	33	672.62979		0.5365

Effect Tests

Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
GROUP	3	3	60.544531	0.9658	0.4221
WT CHG %	1	1	13.145546	0.6291	0.4341

Least Squares Means Table

Level	Least Sq Mean	Std Error	Mean
CORAL SEA	0.4761198	1.5266113	0.55071
LEXINGTON	3.5273879	2.0485636	3.63248
MIDWAY	3.8382992	1.4778137	3.59460
YORKTOWN	1.9671020	1.4539531	2.09113

Female

L3 Lumbar spine

Manova Fit
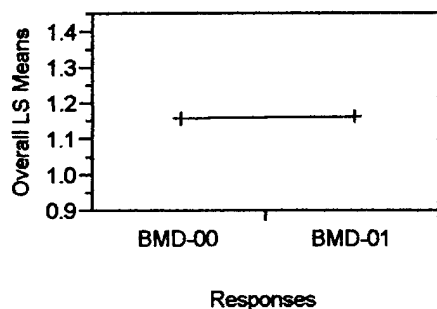**Response Specification**
To construct the linear combinations across responses,
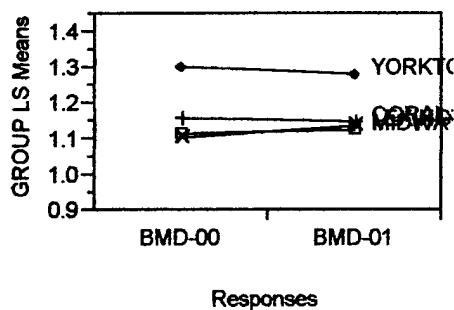
N   14
DFE   9

Least Squares Means
Overall Means

	Overall	BMD-01
MeansBMD-00		
1.15715994		1.16658348

GROUP

GROUP	BMD-00	BMD-01
CORAL SEA	1.15932345	1.14969252
LEXINGTON	1.10050999	1.13740042
MIDWAY	1.11566372	1.12646511
YORKTOWN	1.30546248	1.27997369

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.652594	1.4683	4	9	0.2896
Univar unadj Epsilon=	1	1.4683	4	9	0.2896
Univar G-G Epsilon=	1	1.4683	4	9	0.2896
Univar H-F Epsilon=	1	1.4683	4	9	0.2896

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0085682	0.0771	1	9	0.7875
Univar unadj Epsilon=	1	0.0771	1	9	0.7875
Univar G-G Epsilon=	1	0.0771	1	9	0.7875
Univar H-F Epsilon=	1	0.0771	1	9	0.7875

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.6506411	1.9519	3	9	0.1919
Univar unadj Epsilon=	1	1.9519	3	9	0.1919
Univar G-G Epsilon=	1	1.9519	3	9	0.1919
Univar H-F Epsilon=	1	1.9519	3	9	0.1919

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0373698	0.3363	1	9	0.5762
Univar unadj Epsilon=	1	0.3363	1	9	0.5762
Univar G-G Epsilon=	1	0.3363	1	9	0.5762
Univar H-F Epsilon=	1	0.3363	1	9	0.5762

MALE

L3 Lumbar spine

Manova Fit
Least Squares Means
Overall Means

Responses
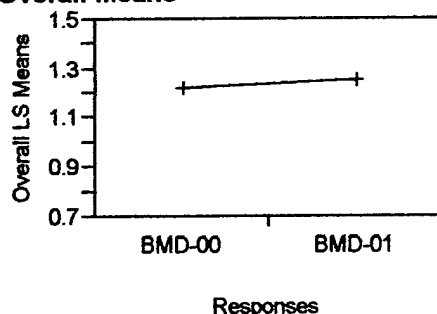
	Overall MeansBMD-00	BMD-01
	1.22044982	1.25148272

GROUP

Responses
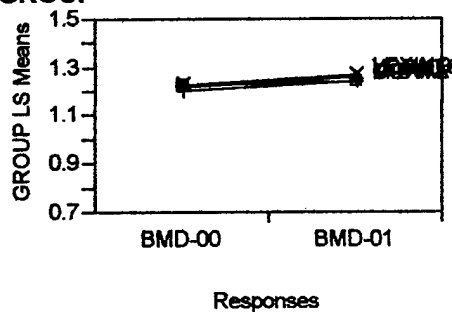
GROUP	BMD-00	BMD-01
CORAL SEA	1.2047798	1.2441386
LEXINGTON	1.22996166	1.26710218
MIDWAY	1.23064457	1.2438819
YORKTOWN	1.22116916	1.25861793

Within Subjects

All Within Interactions

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0734629	0.5510	4	30	0.6998
Univar unadj Epsilon=	1	0.5510	4	30	0.6998
Univar G-G Epsilon=	1	0.5510	4	30	0.6998
Univar H-F Epsilon=	1	0.5510	4	30	0.6998

Time

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.186045	5.5813	1	30	0.0248
Univar unadj Epsilon=	1	5.5813	1	30	0.0248
Univar G-G Epsilon=	1	5.5813	1	30	0.0248
Univar H-F Epsilon=	1	5.5813	1	30	0.0248

Time*GROUP

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0650887	0.6509	3	30	0.5886
Univar unadj Epsilon=	1	0.6509	3	30	0.5886
Univar G-G Epsilon=	1	0.6509	3	30	0.5886

Test	Value	Exact F	NumDF	DenDF	Prob>F
Univar H-F Epsilon=	1	0.6509	3	30	0.5886

Time*WT CHG

Test	Value	Exact F	NumDF	DenDF	Prob>F
F Test	0.0004533	0.0136	1	30	0.9079
Univar unadj Epsilon=	1	0.0136	1	30	0.9079
Univar G-G Epsilon=	1	0.0136	1	30	0.9079
Univar H-F Epsilon=	1	0.0136	1	30	0.9079

——